

***Pilularia americana* A. Braun**
American pillwort
Marsileaceae (Water Clover Family)

Status: State Threatened

Rank: G5S1S2

General Description: Adapted from Hitchcock et al. (1969): This tiny unusual fern arises from a thread-like rhizome that grows along (or beneath) the surface of the ground, sprouting glabrous thread-like leaves that are ½ to 2 in. (1.5-5 cm) long and less than 1/16 in (about 0.5 mm) wide. The solitary sporocarps are borne on short, downward bent stalks that are less than 1/16 in. (2 mm) long, arising from the nodes. The sporocarps are woolly and 1/16 in. (2-3 mm) thick.

Identification Tips: This fern resembles a very small clump of grass. The leaves are distinctively curly when dry. The sporocarps are needed for identification. The sporocarps resemble small woolly marbles.

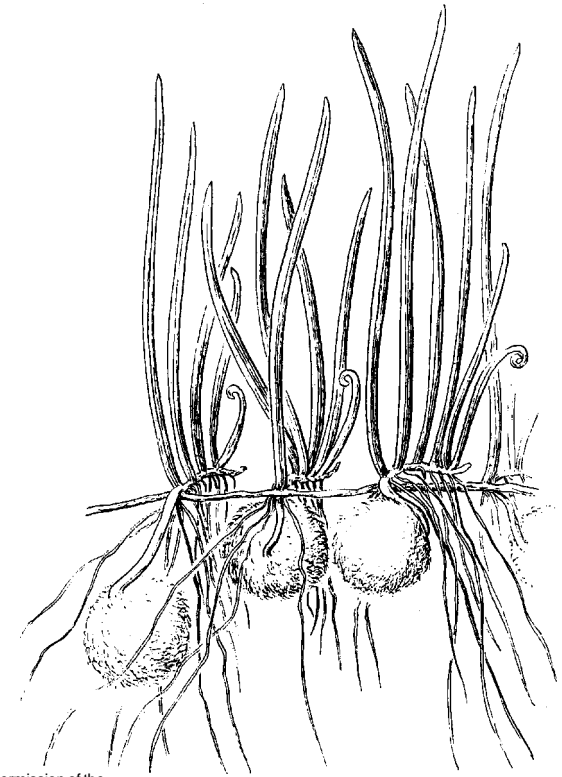
Phenology: Sporocarps are present below ground in June and July. This fern is most easily identifiable before vernal pools dry up in late June.

Range: This species is wide-ranging in North America. In Washington it is found in Adams, Spokane and Lincoln counties. It is considered rare throughout its range but is most common in the California vernal pools.

Habitat: In Washington, *Pilularia americana* has been found in the middle zones of vernal pools from 1930 to 2310 feet (588-704 meters) elevation. Associated species at one or more sites include mosses, annual hairgrass (*Deschampsia danthonioides*), tiny mouse-tail (*Myosurus minimus*), fine-branched popcornflower (*Plagiobothrys leptocladus*), neckweed (*Veronica peregrina*), Geyer's onion (*Allium geyeri*), toad rush (*Juncus bufonius*), needle spikerush (*Elocharis acicularis*), fruit-leaf knotweed (*Polygonum polygaloides* ssp. *confertiflorum*), Pacific foxtail (*Alopecurus saccatus*), whitehead navarretia (*Navarretia leucocephala*), elegant calico-flower (*Downingia elegans*), and bractless hedgehyssop (*Gratiola ebracteata*).

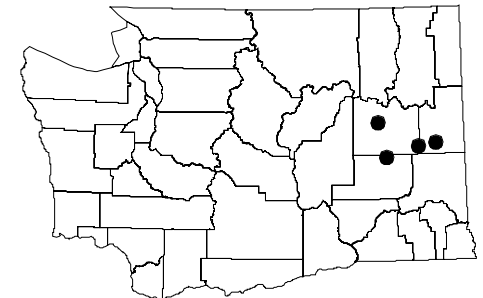
Ecology: The presence of this species on an ungrazed preserve, and its absence in vernal pools at an immediately adjacent heavily grazed site suggests that it is sensitive to grazing disturbance. It produces spores instead of seeds.

Pilularia americana
American pillwort



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Known distribution
of *Pilularia americana*
in Washington



● Current (1980+)
○ Historic (older than 1980)

Pilularia americana

American pillwort



Carol W. Whitham



Florence Caplow

Pilularia americana

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State Status Comments: There are less than five populations of *Pilularia americana* in Washington. This in addition to the degradation of its habitat contributes to its state status.

Inventory Needs: Additional inventory is needed throughout ungrazed vernal pool systems in Adams, Spokane and Lincoln counties in Washington.

Threats and Management Concerns: Since this species has not been found in grazed vernal pools, it is probable that it has lost much of its potential habitat in the state.

Comments: Although this is the only species of *Pilularia* in the western hemisphere (Bjork, 2002), it is poorly collected and often overlooked due to its small size, as well as its lack of flowers and grass-like appearance.

References:

Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley. 1400 pp.

Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1969. *Vascular Plants of the Pacific Northwest Part 1: Vascular Cryptogams, Gymnosperms, and Monocotyledons*. University of Washington Press, Seattle, WA. 914 pp.